

Application No. 10/619,199
Response to OA of 03/06/2006

Listing of the Claims

This listing of claims will replace all prior versions, and listings, of the claims:

1. (original) A storage device comprising:
 - a probe having plural tips; and
 - a storage medium having a surface in which storage cells are to be formed,
 - the plural tips of the probe to form plural perturbations in the surface in at least one of the storage cells for representing a data bit.
2. (original) The storage device of claim 1, wherein the plural perturbations are redundant perturbations for representing the data bit.
3. (original) The storage device of claim 1, wherein the probe comprises a cantilever with the tips attached to and extending outwardly from the cantilever.
4. (original) The storage device of claim 1, wherein the probe is adapted to scan the perturbations of the at least one storage cell with at least one of the tips to detect a state of the data bit as being either a logical "0" or logical "1."
5. (original) The storage device of claim 4, wherein presence of at least one perturbation in a storage cell represents a first state of the data bit, and absence of perturbations in a storage cell represents a second state of the data bit, the storage device further comprising a detector to indicate that the at least one storage cell contains a data bit at the first state in response to the probe detecting at least one of the redundant perturbations.
6. (original) The storage device of claim 1, further comprising a second probe, the second probe having plural tips to form plural perturbations in the surface in another storage cell to represent a second data bit.
7. (original) The storage device of claim 1, wherein the probe is part of an array of probes, each probe in the array of probes having plural tips.

8. (original) The storage device of claim 1, further comprising:
a substrate in which the probe is formed; and
an actuator to move at least one of the substrate and the storage medium to adjust relative positions of the substrate and the storage medium.
9. (original) The storage device of claim 8, wherein the probe is adapted to form plural groups of redundant perturbations on the surface of the storage medium to write plural data bits in respective storage cells, and the actuator is adapted to scan the probe over the plural groups of perturbations to read the data bits.
10. (original) The storage device of claim 1, wherein the tips of the probe are in contact with the surface of the storage medium to form the perturbations.
11. (original) The storage device of claim 10, wherein the tips of the probe are heated to form dents in the surface, the perturbations comprising the dents.
12. (original) The storage device of claim 9, wherein fewer than all of the tips of the probe are in contact with the surface of the storage medium to perform a read.
13. (original) The storage device of claim 11, wherein the probe comprises a cantilever to which the tips are attached, the cantilever being actuated to a slanted position to engage the fewer than all of the plural tips of the probe to contact the surface of the storage medium.
14. (original) A system comprising:
a processor; and
a storage device coupled to the processor and comprising:
a probe having plural tips; and
a storage medium having a surface in which storage cells are to be formed,
each storage cell to store one data bit;
the plural tips of the probe to form at least two perturbations in the surface in at least one of the storage cells for representing a data bit.
15. (original) The system of claim 14, wherein the probe comprises a cantilever with the tips.

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16. (currently amended) The system of claim 14, wherein the probe is adapted to read the ~~two-redundant~~ perturbations of the at least one storage cell with at least one of the tips to detect a state of the data bit.

17. (original) The system of claim 14, wherein the probe is part of an array of probes, each probe in the array of probes having plural tips, the storage medium and the array of probes being moveable with respect to each other to read the storage cells.

18. (original) The system of claim 14, wherein the probe is adapted to form plural groups of redundant perturbations on the surface of the storage medium to write plural data bits in respective storage cells, and the actuator is adapted to move the storage medium and the probe with respect to each other to enable the probe to read data bits.

19. (original) A method of storing data in a storage device, comprising:
 providing a probe having plural tips;
 providing a storage medium having a surface to provide storage cells each to store a data bit; and
 forming at least two perturbations in the surface in at least one of the storage cells for representing a data bit.

20. (original) The method of claim 19, further comprising providing additional probes each having plural tips to form redundant perturbations in respective storage cells.

21. (original) The method of claim 19, further comprising providing an actuator to actuate a cantilever of the probe between a first position in which the plural tips are contacted to the surface, and a second position in which less than all of the plural tips is contacted to the surface.